

Amendments to the Specification:

After the title of the application please insert the following sub-title and paragraph:

CROSS REFERENCE TO RELATED APPLICATIONS

The present application is related to and claims priority of the PCT application number PCT/EP03/50342 of Sentron AG entitled Magnetic field sensor and method for operating the magnetic field sensor, filed on July 29, 2003, the disclosure of which is herein incorporated by reference, which in turn claims priority of the PCT applications number PCT/CH02/00428 filed August 1, 2002 and PCT/CH02/00507 filed September 16, 2002.

Before paragraph [0001] please insert the following sub-title:

FIELD OF THE INVENTION

Before paragraph [0003], please insert the following sub-title and substitute the following amended paragraph:

BACKGROUND OF THE INVENTION

[0003] A magnetic field sensor ~~of the type named in the preamble of claim 1 for measuring magnetic fields~~ is known from EP 1 182 461. The magnetic field sensor is suitable for determining the direction of a two-dimensional magnetic field. The magnetic field sensor comprises a magnetic field concentrator with a flat shape and two sensors that comprise at least one Hall element, whereby the Hall elements are arranged in the area of the edge of the magnetic field concentrator. The first sensor measures a first component of the magnetic field and the second sensor measures a second component of the magnetic field. The direction of the magnetic field can therefore be determined from the signals of the two sensors.

Please delete paragraph [0007].

Before paragraph [0015] please insert the following sub-title:

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Please amend paragraphs [0015-0020] as follows:

- [0015] ~~It is shown in:~~ Fig. 1 shows a plan view of a magnetic field sensor for the measurement of two components of an external magnetic field, with a ring-shaped ferromagnetic core,
- [0016] Fig. 2 shows a cross-section of the magnetic field sensor and field lines,
- [0017] Fig. 3 shows a further magnetic field sensor,
- [0018] Fig. 4A, 4B shows the ring-shaped core in different states of magnetization,
- [0019] Fig. 5, 6 shows the course of magnetic field lines in the ferromagnetic core, and
- [0020] Fig. 7 shows a ring-shaped ferromagnetic core that is magnetized in a specific way.

Before paragraph [0021] please insert the following sub-title:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please replace paragraph [0037] with the following amended paragraph:

- [0037] The following methods 1.1 and ~~4.2~~ 2.1 relate to the first embodiment and their effects are described for the first embodiment whereby the terms and references relate to the figures assigned to the first embodiment.